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Competency-based medical education: don't wait for change, lead it!

Educación médica basada en competencias: ¡No espere a que se produzca el cambio, lidérelo!

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Competency-based medical education (CBME) is being implemented in many countries across the world. Medical bodies, such as the Royal College of Physicians and Surgeons of Canada (RCPSC) and the Accreditation Council for Graduate Medical Education (ACGME) in the United States, are championing the 21st century modernization of the medical education system. Many Canadian medical educators asked, and my colleagues at the University of Toronto, continue to ask: in a country that already produces highly educated and seemingly competent physicians, why is there a need for change?

Until 2017, Canadian anesthesiology trainees spent set times in various pre-determined clinical rotations for a minimum of 5 years of training. Our postgraduate programs have significant oversight from the RCPSC and their respective university's postgraduate medical education department; the overall pass rate for residents attempting anesthesiology accreditation examinations is >90%. Yet, can we prove that graduating residents have acquired the competencies needed to manage all aspects of independent practice? One American program estimated that 10% of their graduates may not be clinically competent despite success at their licensing examination.[1]

Knowledge alone is not enough to be competent; behaviors and attitudes are also needed.[2] Traditional testing methods may fail to detect deficiencies in these skills, behaviors, and attitudes. As such, programs may not be able to identify learners in difficulty until late in their training, when it becomes more difficult to remediate their gaps and support their needs.[3] Apprehensive faculty often withhold negative comments on a learner's clinical performance, leading to a system where we are "failing to fail" those that should not progress.[4] There is a necessity for an innovative approach to assessment, one where learners are measured against a series of pre-determined competencies which should be required for independent practice in their specialty.

In Canada, 20 residency programs are now operating under competence-by-design (CBD), the RCPSC's model

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for CBME. Anesthesiology was an early adopter of the CBD model. At the University of Toronto, our first competence-based cohort of learners entered residency in July 2017. With CBD, the RCPSC had pre-defined our specialty competencies using the updated 2015 CanMEDS framework and a sequence of integrated stages in the new Competence Continuum. Each stage of training has a defined number of outcomes, described as competencies and tasks, that need to be achieved in order to be promoted to the next stage of training. Clearly stating required competencies and tasks has 2 purposes: (1) they provide residents with clear expectations of skills and abilities that must be developed at each stage; (2) they guide supervisors in identifying a resident's strengths and areas that are still in progress.

In addition to defining the standard for competence, success with CBME also requires regular feedback to learners for deliberate practice, adequate access to the clinical environments deemed necessary for competence and sufficient resources to carry out assessments and evaluation of progression.[5] The CBME framework endeavors to create an environment where faculty and resident are engaging in better feedback conversations. To support such an environment, competence-based medical education makes use of multiple formats for assessments of learners, with workplace-based assessments (WBAs) taking a lead role.

WBAs shift assessments from a controlled setting, such as an examination, to an observation in an authentic clinical scenario for assessment of the achievement of competencies and independent accomplishment of tasks. Valid and reliable assessment WBA tools should provide quantitative and qualitative information to enable residents to identify their achievements, and to recognize their gaps and modify learning plans accordingly. In aggregate, these tools should also enable educators to identify underperforming learners earlier and provide the support required for success.[5] There is evidence that decision-making in regards to physician competence is best when multiple points of assessment across a broad range of domains, by multiple assessors, are judged by a group.[6] Both the ACGME and the RCPSC require CBME training programs to develop a competence committee, expected to meet at least twice annually to assess each residents' progress in acquiring competencies. The role of a program's competence committee is for periodic summative evaluation of a residents' clinical performance, from their review of a portfolio of WBAs, in order to make recommendations to the program director regarding progression, promotion, readiness for independent practice, remediation, and dismissal.[7]

Healthcare stakeholders have various needs for medical education,[1] although a common need of all those with a vested interest is for effective and efficient postgraduate training. Patients wish to ensure they are receiving safe, high-quality, and reliable healthcare. They want to trust that their physicians are medically competent, effective communicators, compassionate, highly professional, and adaptable to changes in healthcare needs. Medical trainees would like to be able to ensure they acquire the skills, knowledge, and behaviors needed for independent practice, and achieve their specialty certification in a timely manner. They also want clear standards for training experiences and assessments, and to complete their training in a positive and effective learning environment. Supervising medical educators want to ensure they can train learners to be competent physician colleagues. They are looking for strategies to assess learners' competencies and facilitate their growth, and also want to be able to manage their clinical and educational workloads. Governments are looking to reduce healthcare spending on physicians and physician training, while hospitals are keen to ensure an adequate workforce of competent physicians. Both also have a need for a transparent and accountable medical profession. Licensing and accreditation organizations need to ensure physicians are competent and safe for independent practice. Competence-based medical education is not a panacea that solves all the sometimes conflicting needs and wants of all these stakeholders; however it can offer an opportunity to address them. Validated WBA tools can better show achievement of competencies and readiness for independent practice and certification. Progression and promotion decisions by competence committees can optimize training efficiency and also serves to confirm readiness of competent trainees for independent practice.

Some Colombian anesthesiology residencies have now been extended to a 4-year program.[8] While most Canadian anesthesiology training programs will continue to maintain the length of a CBME-based residency at 5 year's length, 1 university is testing a 4-year accelerated curriculum.[1] In the past year, the Pan American Federation of Faculties and Schools of Medicine (Federación Panamericana Facultades Medicina) signed the *Cartagena Declaration*, which stated that educational institutions should promote dynamic and high-quality training processes guided by competencies, and highlighted the need to update professional competencies. This is the perfect moment to redefine the anesthesiology training standards and competency-based achievements for your residents. In a postgraduate training system lacking a centralized accreditation body, a willingness to define a standard of competence, and to develop the process to do so, serves to confirm the importance of anesthesiologists as leaders in

perioperative patient care. The scope of this change project would allow for identification of specific achievable anesthesiology competencies, suggest reasonable time frames to achieve competencies, and develop means for assessments of competencies. I speak from experience when noting this is a significant undertaking, the biggest lesson learned from the development of CBD is that you cannot do this on your own. Your residents and specialty would benefit from postgraduate programs joining forces to develop processes, curricula and share resources. As programs establish required competencies, they may identify gaps in their own programs which can be met by collaborating with another program—and they in turn can also benefit from your resources which they may lack. Building a multiprogram team can include members that will take on various tasks such as faculty development, curriculum building, sourcing validated WBAs, and developing assessment platforms. In designing your CBME program, you may also identify disparities in your ability to assess certain competencies due to low case volumes, which creates opportunity to develop complimentary educational programs, such as a simulation-based curriculum, for rare but important clinical scenarios.[9]

Ginni Rometty has said "growth and comfort do not coexist". She should know—when she joined IBM as their first female CEO, her vision was to shift IBM away from computers and into artificial intelligence. It took 22 consecutive straight quarters of declining revenue until finally, in January 2018, she was able to announce that her initiatives had led to positive growth and the rebirth of IBM. Certainly, that was a very uncomfortable 6 years spent changing and working toward sustainable growth! There is no reason for your curriculum change to be this uncomfortable—we have found that faculty development is a key aspect of implementing change. Your program's frontline clinical staff are experienced supervisors that have been making judgments about learners for years. In competence-based medical education, this role does not change, but the assessment framework is clearer and more transparent. Maintaining effective communication with clinical faculty will facilitate their active engagement in growing your program and reduce apprehension of upcoming curriculum changes. Consider how you will communicate with your faculty—monthly newsletters, social media, email, workshops, face-to-face meetings, group rounds, and instructional videos clips are common strategies. In addition to engagement from faculty, other key resources for the implementation of CBME will include your departmental medical education experts for curriculum building and assessment tool development, information technology experts for assessment platform construction, research expertise for program evaluation, as well as the time and effort of your faculty for supporting specific curriculum components, testing assessment tools, and taking part in a competence committee.

For those that are eager to start on the journey to CBME, here are my suggestions to get you started . . .

(1) Assemble a dynamic team of passionate and committed people—this should include members of your Anesthesia Program Committee, faculty, residents, and program administrators. Meet with this team often to keep up momentum. These champions will lead others in the change to CBME.
(2) Stepwise rollout—starting with a partial launch will help with faculty education of curriculum changes and facilitate their familiarity with new assessment tools. Start with something manageable and scale up.
(3) Trial of new WBA—CBME requires a shift to faculty being present to observe residents during clinical encounters, which can feel awkward at first.
(4) Create a competence committee—develop your process for reviewing and discussing resident's progress on a regular basis. This can assist you in identifying gaps in your assessment data and help with the design of your assessment platforms.
(5) Accept that the journey to CBME will be challenging and iterative. Involve your front-line faculty and residents in bolstering and adapting the curriculum, knowing that the next version will be better than the last.

Competence-based medical education is not without its challenges, but it does provide the chance to offer better transparency, accountability, and support to residents. Starting the shift in your programs now represents an important opportunity for Colombian anesthesiology programs, educators, and residents to be leaders in CBME.

References

1. Fraser AB, Stodel EJ, Chaput AJ. Curriculum reform for residency training: competence, change and opportunities for leadership. Can J Anesth 2016;63:875–884.
2. Frank JR, Snell LS, Cate OT, et al. Competency-based medical education: theory to practice. Med Teach 2010;32:638–645.
3. Zbieranowski I, Takahashi SG, Verma S, et al. Remediation of residents in difficulty: a retrospective 10-year review of the experience of a postgraduate board of examiners. Acad Med 2013;88:111–116.
4. Dudek NL, Marks MB, Regehr G. Failure to fail: the perspectives of clinical supervisors. Acad Med 2005;80:S84–S87.
5. Lockyer J, Carraccio C, Chan MJ, et al. ICBME CollaboratorsCore principles of assessment in competency-based medical education. Med Teach 2017;39:609–616.

6. Harris P, Bhanji F, Topps M, et al. ICBME CollaboratorsEvolving concepts of assessment in a competency-based world. Med Teach 2017;39:603–608.
7. Promes SB, Wagner MJ. Starting a clinical competency committee. J Grad Med Ed 2014;6:163–164.
8. Olmos-Vega FM, Bonilla-Ramirez AJ. 3 or 4 years for anesthesia residency program? How to approach the discussion in terms of competency-based education. Colombian Journal of Anesthesiology 2017;45:128–131.
9. Chiu M, Tarshis J, Antoniou A, et al. Simulation-based assessment of anesthesiology residents' competence: development and implementation of the Canadian National Anesthesiology Simulation Curriculum (CanNASC). Can J Anesth 2016;63: 1357–1363.